

# THE MINERAL INDUSTRY OF AUSTRIA

By Harold R. Newman

Although the mining industry has maintained a long tradition in Austria, metal mining sector activity has declined during the past few years. All the metal mines, except for the iron ore operation at Erzberg and the tungsten operation at Mittersill, have been closed. Most of the growth in the mineral resources area was in the private sector production of industrial minerals. This sector produced a number of important minerals, which included graphite and talc. Austria was one of the world's leading sources of high-grade microcrystalline graphite (table 1).

Austria has a land area of 82,444 square kilometers and borders the Czech Republic, Germany, Hungary, Italy, and Slovenia. In 2003, the gross domestic product, in purchasing power parity, was \$245 billion and per capita income, which is based on purchasing power parity, was \$30,000. The inflation rate was 1.3 percent, and the unemployment rate was 4.4% (International Monetary Fund, 2004<sup>§1</sup>).

Österreichische Industrie Holding AG (ÖIAG) was the investment and privatization agency of the Government. In line with its Government mandate, ÖIAG employs a double strategy. On the one hand, it stimulates increases in the value of investments for which it is responsible, and on the other, it examines exit scenarios for the partial or complete privatization of those companies for which privatization is envisaged.

Privatization of state-owned industries was underway; although a portion of the mineral industry was still under Government control. In late 2003, the Government started to sell off the state's remaining shares in companies. Two former state-owned steel production companies, Böhler-Uddeholm AG (steel manufacturing), and Voest-Alpine Stahl AG (steel production) were fully privatized with the sale on the stock exchange of the Government's 34.7% share in Voest-Alpine and its 25% share in Böhler-Uddeholm. The state mining holding company Österreichische Bergbauholding AG will be completely privatized within an appropriate time period (Eironline, 2003<sup>§</sup>). For the structure of the mineral industry see table 2.

Dependent on foreign trade, Austria has had an open economy closely linked to the economies of other European Union member states, particularly Germany. The United States was Austria's third leading trade partner, in terms of trade of goods and services, after Germany and Italy.

Treibacher Alloymet AG's Steel and Foundry Unit was a market leader for noble alloys, such as ferromolybdenum and ferrovanadium. With these products, Treibacher was a global presence. The elements contained in these ferroalloys give the alloyed steel such specific properties as acid resistance, cold toughness, heat resistance, high wear resistance, and high-grade hardness. About 90% of production was exported to toolmakers and high-speed steelmakers (Treibacher Industrie AG, 2003b<sup>§</sup>).

Treibacher's Recycling Business Unit recycled metals contained in industrial wastes. The Unit's focus was on the processing of wastes and residues that contain vanadium and/or molybdenum and/or nickel. A byproduct of these activities was the energy generated by the incineration of special wastes (Treibacher Industrie AG, 2003a<sup>§</sup>).

The Erzberg Mine of Voest-Alpine Erzberg GmbH produced beneficiated iron ore that was shipped by rail to the nearby steel mills of Voest-Alpine Stahl AG for further beneficiation and production of self-fluxing sinter that averaged 50% iron and 3% manganese.

Wolfram Bergbau und Hütten GmbH operated one of the western world's largest underground tungsten mines at Mittersill and a tungsten conversion plant at Bergla. The company produced tungsten oxide and metal from its mine production of scheelite concentrate. Wolfram also recycled tungsten-bearing secondary raw materials (International Tungsten Industry Association, 2003<sup>§</sup>).

ÖIAG-Bergbauholding AG (ÖeBAG) was responsible for the mining of mixed ores and lignite. ÖeBAG basically covered the Styrian Erzberg and the West-Styrian lignite mining area, which included the former mines in the cities of Bad Bleiberg, Wolfsberg, and Wies-Elbiswald. ÖeBAG conducted the execution of all mine closings and assurance measures, which included restoration, thereby managing the controlled retreat of ÖeIAG from its mining operations (Österreichische Industrieholding AG, 2003<sup>§</sup>).

Because of Austria's long history of minerals exploration and a strong mining tradition, geologic conditions are fairly well known. Future mining activities will most likely be concentrated in industrial minerals, mainly for domestic consumption. The chances of finding new and workable base-metal deposits are probably small.

## Internet References Cited

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Treibacher Industrie AG, 2003b, Technological leader and long-standing partner of the international steel and foundry industry, accessed August 23, 2004, at URL [http://www.treibacher.com/en/d\\_alloyment.html](http://www.treibacher.com/en/d_alloyment.html).

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<sup>1</sup>References that include a section mark (§) are found in the Internet References Cited section.

## **Major Source of Information**

Bundesministerium für Wirtschaft und Arbeit  
Denisgasse 31  
1200 Vienna, Austria

TABLE 1  
AUSTRIA: PRODUCTION OF MINERAL COMMODITIES<sup>1, \*</sup>

(Thousand metric tons unless otherwise specified)

Commodity		1999	2000	2001	2002	2003 <sup>e</sup>
<b>METALS</b>						
Aluminum, metal, secondary	tons	143,000	158,100	149,900 <sup>r</sup>	151,100 <sup>r</sup>	150,000
Copper, refined:						
Primary	do.	5,000	1,000	-- <sup>r</sup>	-- <sup>r</sup>	-- <sup>2</sup>
Secondary	do.	77,573	78,000	68,642 <sup>r</sup>	64,932 <sup>r</sup>	65,084 <sup>2</sup>
Total	do.	82,573	79,000	68,642 <sup>r</sup>	64,932 <sup>r</sup>	65,084 <sup>2</sup>
Gold, mine output, Au content <sup>e</sup>	kilograms	100	100	50	50	25
Iron and steel:						
Iron ore and concentrate:						
Gross weight		1,752	1,859	1,843	1,900 <sup>e</sup>	1,800
Fe content		553	586	581	600 <sup>e</sup>	570
Metal:						
Pig iron		3,913	4,318	4,375	4,669	4,600
Ferroalloys, electric arc furnace <sup>e</sup>		12	12	9	10	10
Crude steel		5,213	5,725	5,887	6,208	6,261 <sup>2</sup>
Semimanufactures		4,657	5,035	5,251	5,300 <sup>e</sup>	5,300
Lead, refined, secondary <sup>e</sup>	tons	24,500	24,000	22,000	20,000	20,000
Manganese, Mn content of domestic iron ore <sup>e</sup>	do.	20,000	20,000	18,000	16,000	16,000
Tungsten, mine output, W content of concentrate	do.	1,610	1,600 <sup>e</sup>	1,237	1,400 <sup>e</sup>	1,400
<b>INDUSTRIAL MINERALS</b>						
Cement, hydraulic		3,817	3,799	3,863	3,800 <sup>e</sup>	3,800
Clays:						
Illite		190 <sup>e</sup>	305	300 <sup>e</sup>	60 <sup>r</sup>	60
Kaolin:						
Crude		152	119	90 <sup>e</sup>	100	100
Marketable <sup>e</sup>		50	50	40	50 <sup>r</sup>	100
Other <sup>e</sup>		2,600	2,600	2,600	2,600	2,600
Graphite, crude	tons	2,635	669	116	-- <sup>r</sup>	--
Gypsum and anhydrite, crude		999	946	929	962 <sup>r</sup>	1,004 <sup>2</sup>
Lime <sup>e</sup>		2,000	2,000	2,000	2,000	2,000
Magnesite:						
Crude		749	726	681	728 <sup>r</sup>	767 <sup>2</sup>
Sintered or dead-burned		325	270	202	200	200
Caustic calcined <sup>e</sup>		60	60	60	60	60
Nitrogen, N content of ammonia <sup>e</sup>	tons	450	450	440	400	400
Pigments, mineral, micaceous iron oxide <sup>e</sup>	do.	6,000	6,000	5,000	5,000	5,000
Pumice (trass)	do.	4,272	3,961	4,000 <sup>e</sup>	4,000	4,000
Salt:						
Rock <sup>e</sup>		1	1	1	1	1
In brine	thousand cubic meters	2,692	3,130	2,986	3,212 <sup>r</sup>	3,422 <sup>2</sup>
Sand and gravel:						
Quartz sand		685 <sup>r</sup>	698 <sup>r</sup>	700 <sup>r, e</sup>	835 <sup>r</sup>	944 <sup>2</sup>
Other sand and gravel <sup>e</sup>		18,000	18,000	18,000	5,261 <sup>r</sup>	6,079 <sup>2</sup>
Total		18,685 <sup>r</sup>	18,698 <sup>r</sup>	18,700 <sup>r, e</sup>	6,096 <sup>r</sup>	7,023 <sup>2</sup>
Sodium compounds, n.e.s., manufactured: <sup>e</sup>						
Soda ash		150	150	150	150	150
Sulfate		100	100	100	100	100
Stone: <sup>3</sup>						
Dolomite		7,968	7,152	6,172	5,836 <sup>r</sup>	6,079 <sup>2</sup>
Quartz and quartzite		409	372	402	362 <sup>r</sup>	283
Other:						
Limestone and marble		26,409	23,824	23,799	24,884 <sup>r</sup>	24,477 <sup>2</sup>
Basalt		5,201	4,933	5,000 <sup>e</sup>	4,533 <sup>r</sup>	4,669 <sup>2</sup>
Marl		1,423	1,559	1,569	1,534 <sup>r</sup>	1,069 <sup>2</sup>
Crushed stone <sup>e</sup>		12,000	12,000	12,000	12,000	12,000
Total		45,033	42,316	42,368	42,951 <sup>r</sup>	42,215 <sup>2</sup>
Grand total		53,410	49,840	48,942	49,149 <sup>r</sup>	48,577 <sup>2</sup>

See footnotes at end of table.

TABLE 1--Continued  
AUSTRIA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>, \*

(Thousand metric tons unless otherwise specified)

Commodity		1999	2000	2001	2002	2003 <sup>e</sup>
INDUSTRIAL MINERALS--Continued						
Sulfur, byproduct of petroleum and natural gas	tons	9,468	9,646	9,500 <sup>e</sup>	9,500	9,500
Talc and soapstone, crude	do.	1,129,516	133,060	140,000 <sup>e</sup>	138,195 <sup>r</sup>	137,596 <sup>2</sup>
MINERALFUELS AND RELATED MATERIALS						
Coal, brown and lignite		1,137	1,255	1,194	1,413 <sup>r</sup>	1,152 <sup>2</sup>
Coke		1,400	1,400	1,411	1,394 <sup>r</sup>	1,400
Natural gas:						
Gross	million cubic meters	1,791	1,805	1,954	2,015 <sup>r</sup>	2,030 <sup>2</sup>
Marketed <sup>e</sup>	do.	1,000	1,200	1,200	1,200	1,200
Oil shale	tons	496	440	408	396 <sup>r</sup>	432 <sup>2</sup>
Petroleum:						
Crude	thousand 42-gallon barrels	6,879	7,024	7,178	7,176 <sup>r</sup>	6,976 <sup>2</sup>
Refinery products:						
Liquefied petroleum gas	do.	241	186	200 <sup>e</sup>	159 <sup>r</sup>	245 <sup>2</sup>
Gasoline	do.	18,196	15,413	16,000 <sup>e</sup>	17,017 <sup>r</sup>	15,394 <sup>2</sup>
Kerosene and jet fuel	do.	4,256	4,360	4,500 <sup>e</sup>	3,888 <sup>r</sup>	3,576 <sup>2</sup>
Distillate fuel oil	do.	27,387	25,897	26,000 <sup>e</sup>	27,457 <sup>r</sup>	26,987 <sup>2</sup>
Residual fuel oil	do.	8,521	6,325	6,000 <sup>e</sup>	6,732 <sup>r</sup>	7,009 <sup>2</sup>
Unspecified	do.	8,673	14,748	15,000 <sup>e</sup>	30,387 <sup>r</sup>	26,169 <sup>2</sup>
Refinery fuel and losses	do.	5,497	5,149	5,000 <sup>e</sup>	4,550 <sup>r</sup>	4,739 <sup>2</sup>
Total	do.	72,771	72,078	72,700 <sup>e</sup>	90,190 <sup>r</sup>	84,119 <sup>2</sup>

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. <sup>r</sup>Revised.

<sup>1</sup>Table includes data available through May 2004.

<sup>2</sup>Reported figure.

<sup>3</sup>Excludes stone used by the cement and iron and steel industries.

\*Revised on October 20, 2005.

TABLE 2  
AUSTRIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2003

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina, fused	Treibacher Schleifmittel AG	Plant at Villach	100
Aluminum	Aluminum Lend GmbH (Salzburger Aluminium AG, 100%)	Secondary ingot plant at Lend	25
Do.	Austria Sekundär Aluminium GmbH (Amag Austria Metall, 100%)	Secondary ingot plant at Ranshofen	50
Cement	Lafarge Perlmooser AG (Lafarge France, 100%)	Plants at Mannesdorf and Retsnei, grinding plant at Kirchbichl	2,200
Do.	Wietersdorfer Zemenwerke	Plants at Peggau and Wietersdorf	1,000
Do.	Zementwerk Leube	Plant at Gartenau	700
Do.	SPZ Zemenwerke Eiberg	Plant at Eiberg	600
Do.	Gmundner Zement	Plant at Gmundner	580
Coal	Graz-Köflacher Eisenbahn und Bergbaugesellschaft GmbH (Government, 100%)	Oberdorf Mine	1,200
Copper	Austria Metall AG (Metal Mining Corp. of Canada, 41%; Mount Isa Mines of Australia, 41%; Government, 18%)	Plant at Brixlegg	75
Ferroalloys, FeV, FeMo, FeNi	Treibacher Alloymet AG (Treibacher Industries AG, 100%)	Plant at Treibach	10
Graphite	Industrie und Bergbaugesellschaft Pryssok & Co KG	Trandorf Mine at Mühlendorf	15
Do.	Grafitbergbau Kaiserberg AG	Kaisersberg Mine	3
Do.	do.	Trieben Mine	3
Gypsum	Erste Salzburger Gipswerk-Gesellschaft Christian Moldan KG	Abtenau and Moosegg Mines	300
Do.	Rigips Austria GmbH	Grundlsee, Puchberg, Unterkainisch, and Weisenbach Mines	250
Do.	Knauf Gesellschaft GmbH	Hinterstein Mine	160
Iron ore	Voest-Alpine Erzberg GmbH	Erzberg Mine at Eisenerz	1,000
Lead	Bleiberg Bergwerks-Union AG (Metall Gesellschaft, 74%)	Smelter at Brixlegg	55
Magnesite	Veitsch-Radex AG	Mines at Breitenau, Hochfilzen, and Radenthein	600
Do.	Radex Austria AG (Österreichische Magnesit AG, 100%)	Millstatteralpe Mine	250
Natural gas	million cubic meters Österreichische Mineralölverwaltung AG (Government, 100%)	Fields in Vienna Basin	1,500
Nitrogen, N content of ammonia	Agrolinz AG	Plant at Linz	498
Salt	Österreichische Salinen GmbH (Government, 100%)	Mines at Bad Ischl	800
Steel	Voest-Alpine Stahl GmbH	Plants at Donawitz and Linz	4,500
Talc	Luzenac Naintsch AG	Mines at Lassing, Rabenwald, and Weisskirchen; plants at Oberfeistitz and Weisskirchen	160
Tungsten	Wolfram Bergbau und Hütten GmbH (Inmet Mining Corp., 100%)	Mittersill Mine, Felbertal, Salzburg; conversion plant, Bergla	350